

## WHAT IS CLAIMED IS:

1. A magnetic sensor including a substrate having a magnetism-sensitive element formed thereon and which detects a magnetic signal from a medium having magnetic signals recorded thereon, the magnetic sensor having:
  - an inorganic film formed on the magnetism-sensitive element;
  - an organic film formed on the inorganic film; and
  - a hard membrane formed on the organic film,wherein said magnetic sensor has said hard membrane disposed opposite to the medium, and relatively moves along said medium.
2. The magnetic sensor as set forth in claim 1, wherein the hard membrane is of amorphous carbon hydride (will be referred to as "DLC film" hereinafter).
3. The magnetic sensor as set forth in claim 1, having an intermediate film formed between the organic film and hard membrane.
4. The magnetic sensor as set forth in claim 3, wherein the intermediate film has mixed therein any one or more of Si, Ti, Cr, W and Ta having a large force of bonding to carbon.
5. The magnetic sensor as set forth in claim 3, wherein the intermediate film is formed from Si, C, O and H.
6. The magnetic sensor as set forth in claim 3, wherein the boundary between the intermediate film and hard membrane has a structure in which the components vary continuously.

7. A position detector comprising:

a magnetic scale with position signals longitudinally provided thereon; and  
a magnetic sensor including a substrate having a magnetism-sensitive element formed thereon, an inorganic film formed on the magnetism-sensitive element, an organic film formed on the inorganic film, and a hard membrane formed on the organic film;

wherein said magnetic sensor has said hard membrane disposed opposite to the magnetic scale, and relatively moves along the magnetic scale to detect position signals provided on the magnetic scale.

8. The position detector as set forth in claim 7, wherein the hard membrane is of amorphous carbon hydride (will be referred to as "DLC film" hereinafter).

9. The position detector as set forth in claim 7, having an intermediate film formed between the organic film and hard membrane.

10. The position detector as set forth in claim 9, wherein the intermediate film has mixed therein any one or more of Si, Ti, Cr, W and Ta having a large force of bonding to carbon.

11. The position detector as set forth in claim 9, wherein the intermediate film is formed from Si, C, O and H.

12. The position detector as set forth in claim 9, wherein the boundary between the intermediate film and hard membrane has a structure in which the components vary continuously.